HS SERIES SHELL SIZE 12–35mm TRADITIONAL CONNECTORS

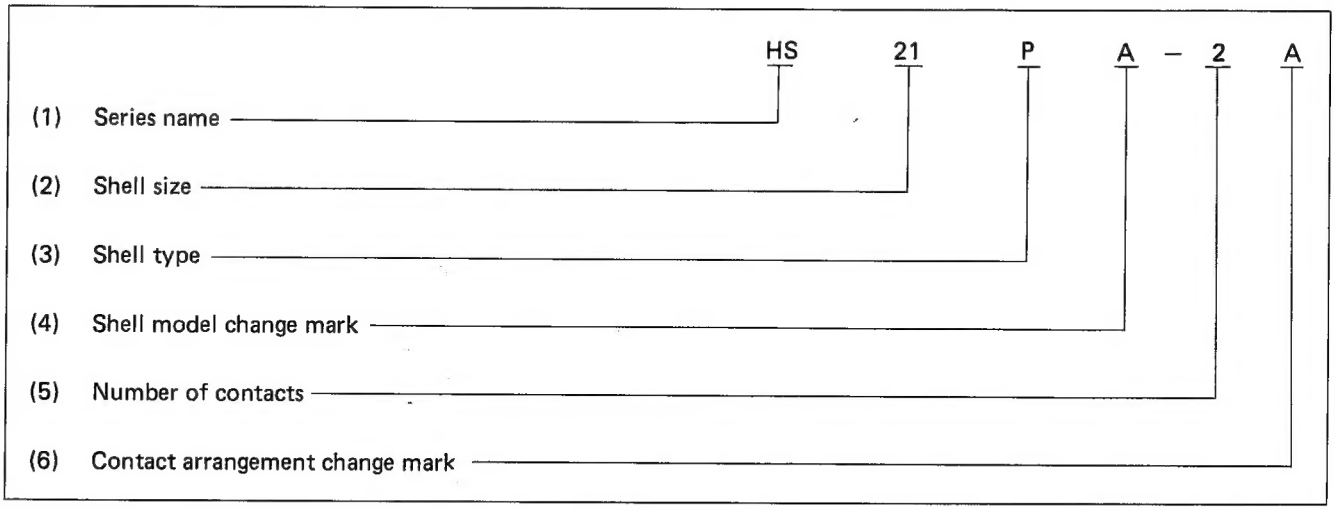
Introduction

The HS series is generally called "metal connector", and is the most widely used standard multi-pin circular connector.
Being sturdy and simple in construction, the HS connectors are stable mechanically and electrically and are employed by NTT and set manufacturers as standard parts.
For the performance of the HS series connectors, see the terminal arrangement of the HS series on pages 15-18.

Material & Finish

Part	Material	Finish
Shell	Brass or Synthetic resin	Nickel plated
Insulator	Synthetic resin	
Pin contact	Brass	Nickel plated
Socket contact	Brass or phoshor bronze	Nickel plated

Ordering Information



(1) Series name: HS stands for HIROSE STANDARD.
(2) Shell size: The shell size is expressed as the outside diameter of the plug fitting section (insulator) with seven types; 12, 14, 16, 21, 25, 28 and 35.
(3) Shell type: The shell is classified into the following types.
- P : Plug
- R : Receptacle
- J : Jack
- RC : Receptacle cap

(4) Shell model change mark: Each time the shell undergoes a model change, it is marked as A, B or C.
(5) Contact: Number of terminals.
(6) Contact arrangement change mark: When the contact fitting section or contact arrangement undergoes a change, it is marked as A, B, C....after the number of contacts.

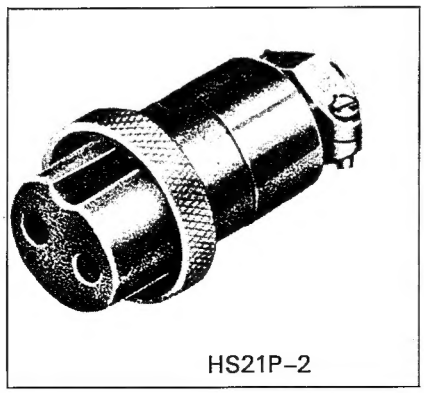
Cross Reference to NTT

NTT to HRS

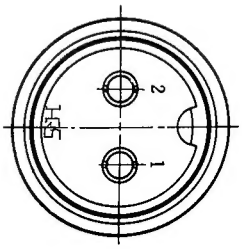
NTT No.	HRS No.	Page	NTT No.	HRS No.	Page
CN–1002RP	SR13–10P–2S(01)	–	CN–1603RJ	HS16R–3(01)	12
CN–1002RJ	SR13–10R–2P(01)	–	CN–1604RP	HS16P–4(01)	11
CN–1602RP	HS16P–2(01)	11	CN–1604RJ	HS16R–4(01)	12
CN–1602RJ	HS16R–2(01)	12	CN–2103RP	HS21P–3(01)	11
CN–1603RP	HS16P–3(01)	11	CN–2103RJ	HS21R–3(01)	12

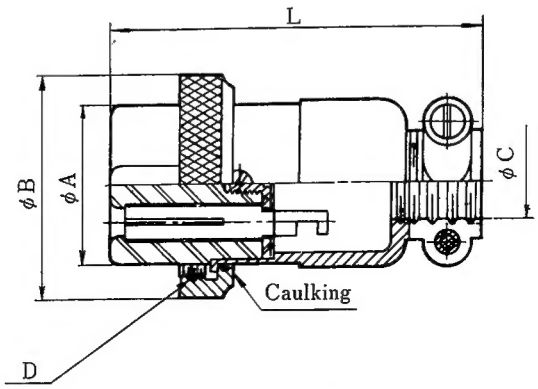
Note: NTT stands for Nippon Telegraph and Telephone Corporation.

Plug



HS21P–2



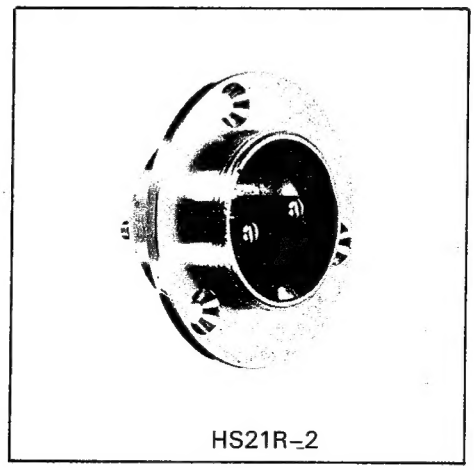


(An example in shape)

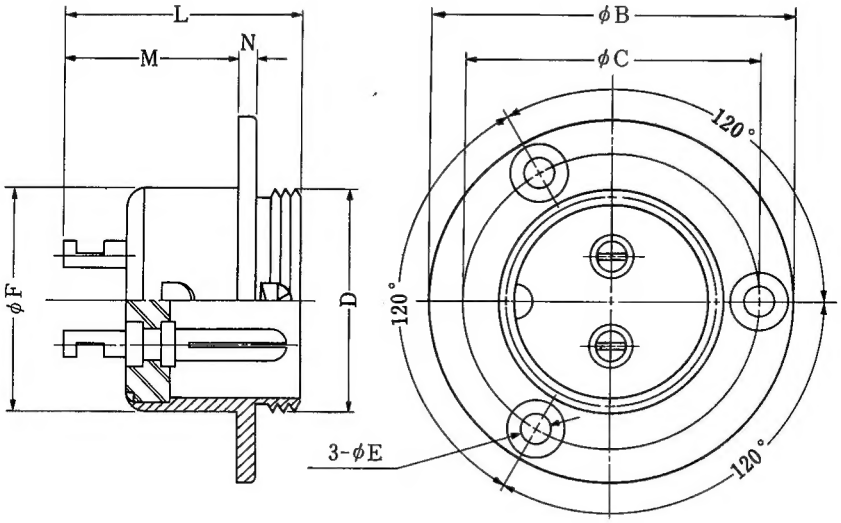
HRS No.	Part No.	ϕA	ϕB	ϕC	D	L
101–0002–0	HS12P–2	12	18	7	M15.5x1	38
101–0013–7	HS14P–2	13.5	21.5	8.5	M19x1	43
101–0030–6	HS16P–2	15.5	21.5	8.5	M19x1	43
101–0031–9	HS16P–3	15.5	21.5	8.5	M19x1	43
101–0034–7	HS16P–4	15.5	21.5	8.5	M19x1	43
101–0275–3	HS16P–5	15.5	21.5	8.5	M19x1	43
101–0053–1	HS21P–2	21	28	10	M25x1	50
101–0060–7	HS21P–3	21	28	10	M25x1	50
101–0066–3	HS21P–4	21	28	10	M25x1	50
101–0069–1	HS21P–5	21	28	10	M25x1	50
101–0074–1	HS21P–6	21	28	10	M25x1	50
101–0075–4	HS21P–7	21	28	10	M25x1	50
101–0076–7	HS21P–8	21	28	10	M25x1	50
101–0369–5	HS21P–10	21	28	10	M25x1	49
101–0115–7	HS25P–2	25	32	10	M29x1	54.5
101–0117–2	HS25P–3	25	32	10	M29x1	54.5
101–0119–8	HS25P–4	25	32	10	M29x1	54.5
101–0120–7	HS25P–5	25	32	10	M29x1	54.5

HRS No.	Part No.	ϕA	ϕB	ϕC	D	L
101–0122–2	HS25P–6	25	32	10	M29x1	54.5
101–0124–8	HS25P–7	25	32	10	M29x1	54.5
101–0128–9	HS25P–8	25	32	10	M29x1	54.5
101–0129–1	HS25P–10	25	32	10	M29x1	54.5
101–0151–0	HS28P–2	28	38	16	M34x1	64.5
101–0153–6	HS28P–3	28	38	16	M34x1	64.5
101–0154–9	HS28P–4	28	38	16	M34x1	64.5
101–0155–1	HS28P-4A	28	38	16	M34x1	64.5
101–0157–7	HS28P–7	28	38	16	M34x1	64.5
101–0158–0	HS28P–8	28	38	16	M34x1	64.5
101–0159–2	HS28P–12	28	38	16	M34x1	64.5
101–0272–5	HS35PB–2	35	46	19	M41x1	71.5
101–0270–0	HS35PB–3	35	46	19	M41x1	71.5
101–0187–8	HS35PB–16	35	46	19	M41x1	71.5
101–0189–3	HS35PB–20	35	46	19	M41x1	71.5

Receptacle



HS21R-2



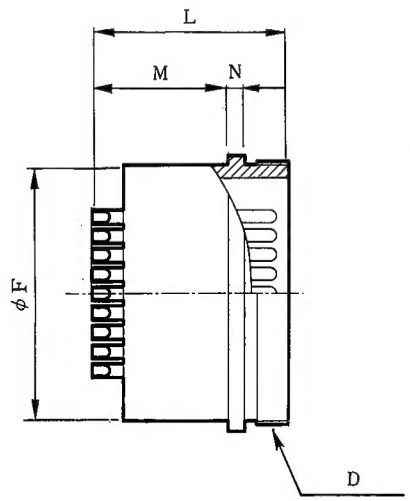
(An example in shape)

HRS No.	Part No.	φB	φC	D	φE	φF	L	M	N
101-0007-4	HS12R-2	23	19	M15.5x1	2.1*	14	22.5	16	1.5
101-0016-5	HS14R-2	32	25.5	M19x1	3.2	16.5	23	16	2
101-0040-0	HS16R-2	32	25.5	M19x1	3.2	19	23	16	2
101-0041-2	HS16R-3	32	25.5	M19x1	3.2	19	23	16	2
101-0042-5	HS16R-4	32	25.5	M19x1	3.2	19	23	16	2
101-0448-0	HS16R-5	32	25.5	M19x1	3.2	19	23	16	2
101-0084-5	HS21R-2	41	33	M25x1	3.2	25	26.5	19.5	2
101-0089-9	HS21R-3	41	33	M25x1	3.2	25	26.5	19.5	2
101-0091-0	HS21R-4	41	33	M25x1	3.2	25	26.5	19.5	2
101-0093-6	HS21R-5	41	33	M25x1	3.2	25	26.5	19.5	2
101-0095-1	HS21R-6	41	33	M25x1	3.2	25	26.5	19.5	2
101-0096-4	HS21R-7	41	33	M25x1	3.2	25	26.5	19.5	2
101-0097-7	HS21R-8	41	33	M25x1	3.2	25	26.5	19.5	2
101-0370-4	HS21R-10	41	33	M25x1	3.2	25	24.5	17.5	2
101-0130-0	HS25R-2	46	37	M29x1	3.2	29	26.5	19.5	2
101-0131-3	HS25R-3	46	37	M29x1	3.2	29	26.5	19.5	2
101-0132-6	HS25R-4	46	37	M29x1	3.2	29	26.5	19.5	2
101-0133-9	HS25R-5	46	37	M29x1	3.2	29	26.5	19.5	2
101-0135-4	HS25R-6	46	37	M29x1	3.2	29	26.5	19.5	2
101-0136-7	HS25R-7	46	37	M29x1	3.2	29	26.5	19.5	2
101-0137-0	HS25R-8	46	37	M29x1	3.2	29	26.5	19.5	2
101-0138-2	HS25R-10	46	37	M29x1	3.2	29	26.5	19.5	2
101-0160-1	HS28R-2	51	43	M34x1	3.2	32	35.5	28	2
101-0162-7	HS28R-3	51	43	M34x1	3.2	32	36	28.5	2
101-0163-0	HS28R-4	51	43	M34x1	3.2	32	26.5	19	2
101-0164-2	HS28R-4A	51	43	M34x1	3.2	32	36	28.5	2
101-0276-6	HS28R-7	51	43	M34x1	3.2	32	26.5	19	2
101-0166-8	HS28R-8	51	43	M34x1	3.2	32	26.5	19	2
101-0169-6	HS28R-12	51	43	M34x1	3.2	32	26.5	19	2
101-0269-0	HS35RC-2	58	50	M41x1	3.2	40	38	28.5	2.5
101-0273-8	HS35RC-3	58	50	M41x1	3.2	40	38	28.5	2.5

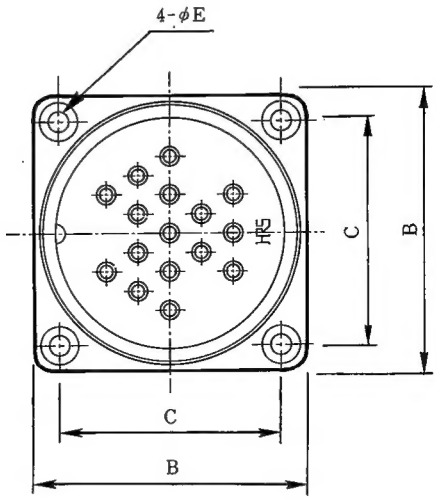
*: 1.6φ flat head screw is recommended for mounting.

Receptacle

HS35RA–16

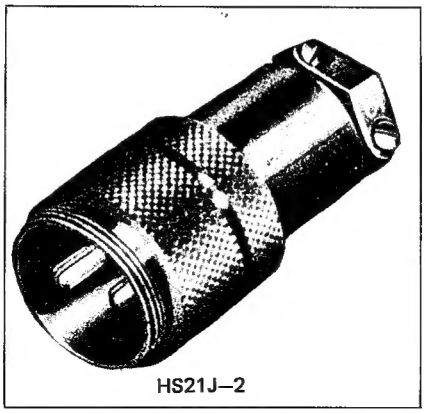


(An example in shape)

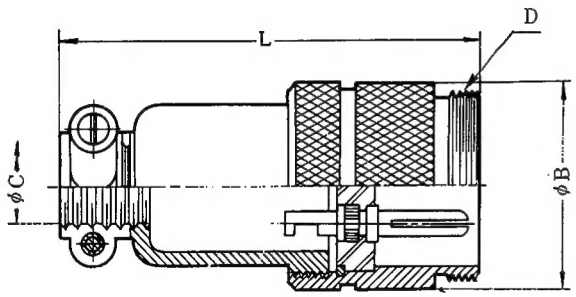


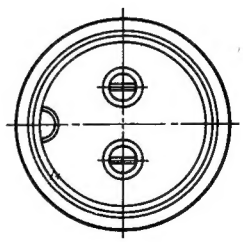
HRS No.	Part No.	B	C	D	φE	φF	L	M	N
101–0200–4	HS35RA–16	43	35	M41x1	3.2	40	31	21.5	2.5
101–0201–7	HS35RA–20	43	35	M41x1	3.2	40	31	21.5	2.5

Jack



HS21J–2

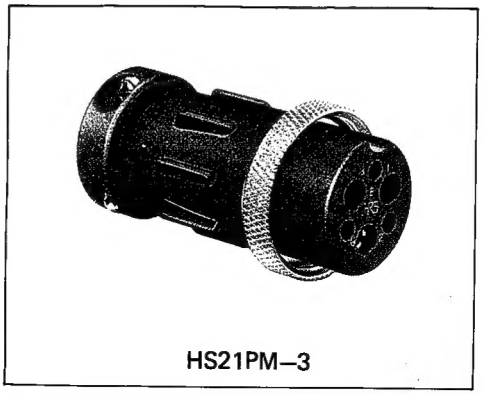




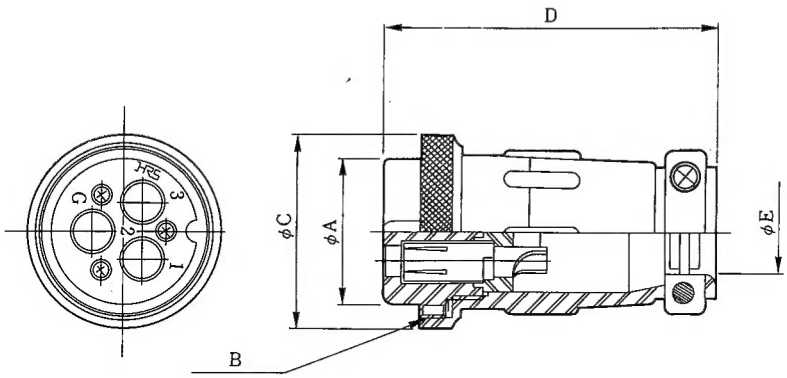
(An example in shape)

HRS No.	Part No.	φB	φC	D	L
101–0010–9	HS12J–2	18	7	M15.5x1	44.5
101–0047–9	HS16J–2	21.5	8.5	M19x1	50
101–0048–1	HS16J–3	21.5	8.5	M19x1	50
101–0049–4	HS16J–4	21.5	8.5	M19x1	50
101–0416–3	HS16J–5	21.5	8.5	M19x1	50
101–0104–0	HS21J–2	28	10	M25x1	57
101–0105–3	HS21J–3	28	10	M25x1	57
101–0106–6	H221J–4	28	10	M25x1	57
101–0107–9	HS21J–5	28	10	M25x1	57

Plug (Plastic Type)



HS21PM–3

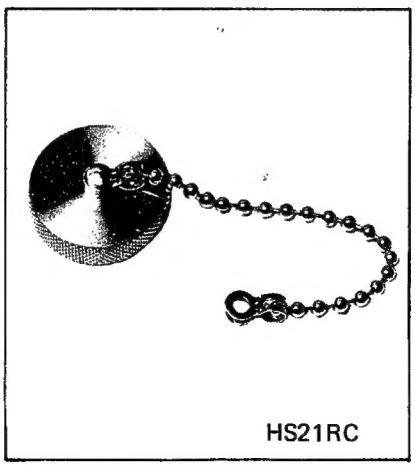


(An example in shape)

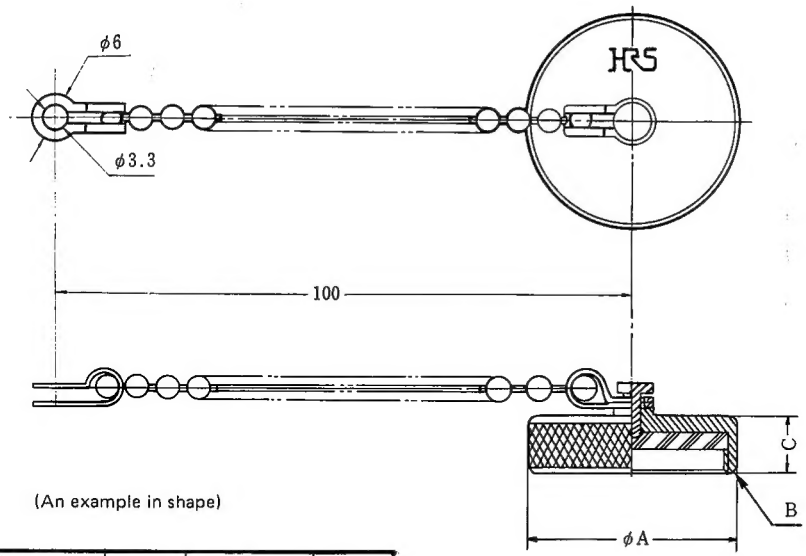
HRS No.	Part No.	φA	B	φC	D	φE
101–0541–5	HS21PM–3	21.7	M25x1	28	54	10
101–0540–2	HS28PD–3B	28.6	M34x1	38	66	16

Remarks: Class A electric products in compliance with the Electric Products Control Regulations

Cap for Receptacle



HS21RC



(An example in shape)

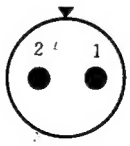
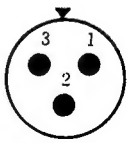
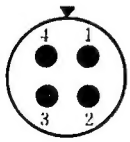
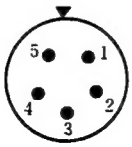
HRS No.	Part No.	φA	B	C
101–0011–1	HR12RC	18	M15.5x1	7
101–0027–1	HR14RC	21.5	M19x1	7
101–0109–4	HR21RC	28	M25x1	7
101–0148–6	HS25RC	32	M29x1	7
101–0174–6	HS28RC	38	M34x1	7
101–0207–3	HS35RC	46	M41x1	9

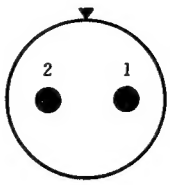
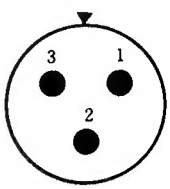
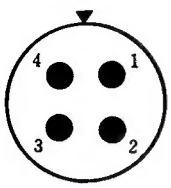
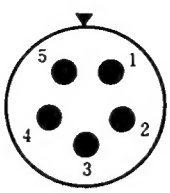
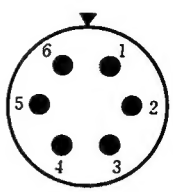
Note: Part No. HS14RC is possible to use as cap of size 16.

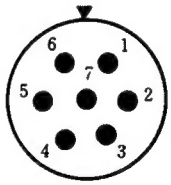
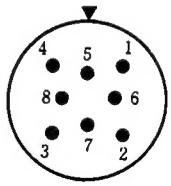
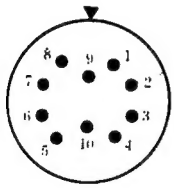
Contact Arrangement

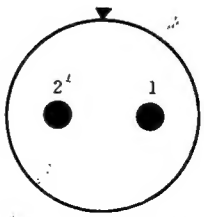
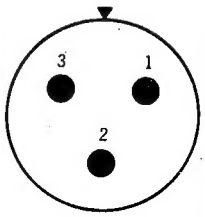
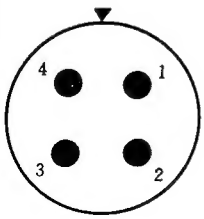
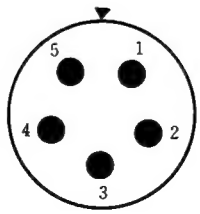
Shell size	
12	
No. of pins	2
Withstanding voltage	AC1000V a minute
Current rating	7 A
Insulation resistance	1000MΩ MIN.
Contact resistance	5mΩ MAX.
Solder cup dia.	ϕ1.5

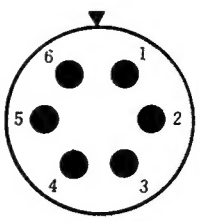
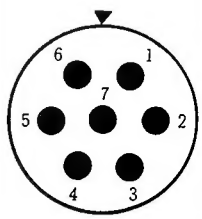
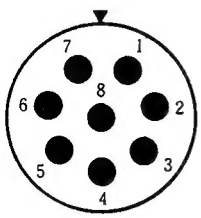
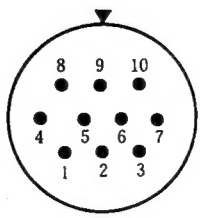
Shell size	
14	
No. of pins	2
Withstanding voltage	AC1000V a minute
Current rating	7 A
Insulation resistance	1000MΩ MIN.
Contact resistance	5mΩ MAX.
Solder cup dia.	ϕ1.5

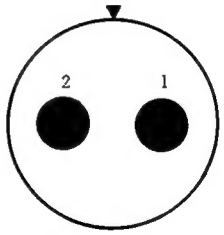
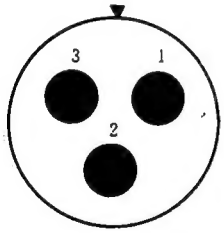
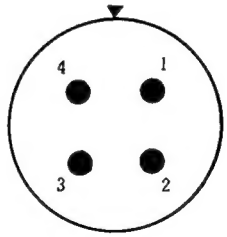
Shell size				
16				
No. of pins	2	3	4	5
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	7A	7A	7A	2A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	ϕ1.8	ϕ1.8	ϕ1.8	ϕ1.5

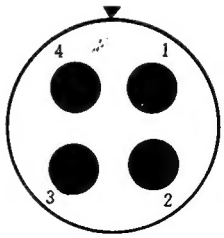
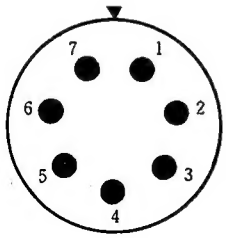
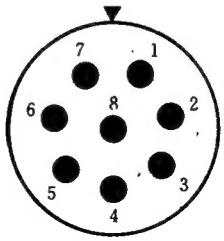
Shell size					
21					
No. of pins	2	3	4	5	6
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute	AC500V a minute	AC1000V a minute
Current rating	10A	10A	10A	10A	7A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	ϕ2.0	ϕ2.0	ϕ2.0	ϕ2.0	ϕ1.5

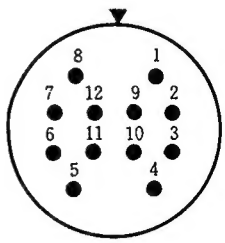
Shell size				
21				
No. of pins	7	8	10	
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute	
Current rating	7A	4A	3A	
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	
Solder cup dia.	φ1.5	φ1.2	φ1.5	

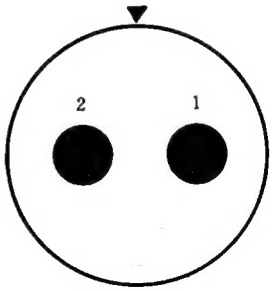
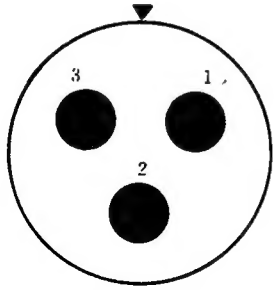
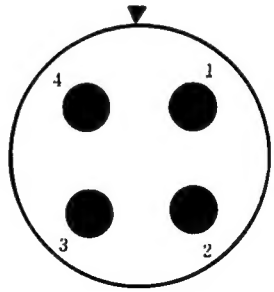
Shell size				
25				
No. of pins	2	3	4	5
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	10A	10A	10A	10A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	φ2.0	φ2.0	φ2.0	φ2.0

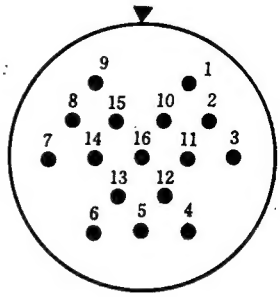
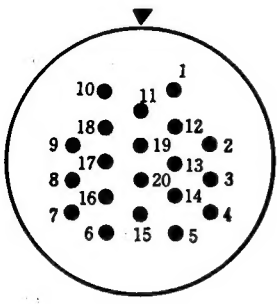
Shell size				
25				
No. of pins	6	7	8	10
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	10A	10A	10A	4A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	φ2.0	φ2.0	φ2.0	φ1.2

Shell size			
28			
No. of pins	2	3	4
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	30A	30A	7A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	φ5.0 (receptacle: φ6)	φ5.0 (receptacle: φ6)	φ1.8 (receptacle: φ1.5)

Shell size			
28			
No. of pins	4A	7	8
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	20A	10A	10A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	φ4.0 (receptacle: φ5)	φ2.0	φ2.0

Shell size	
28	
No. of pins	12
Withstanding voltage	AC1000V a minute
Current rating	4A
Insulation resistance	1000MΩ MIN.
Contact resistance	5mΩ MAX.
Solder cup dia.	φ1.2

Shell size			
35			
No. of pins	2	3	4
Withstanding voltage	AC1000V a minute	AC1000V a minute	AC1000V a minute
Current rating	40A	40A	20A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	Crimp contact dia. ϕ4.7	Crimp contact dia. ϕ4.7	ϕ4.0 (receptacle : ϕ3.0)

Shell size		
35		
No. of pins	16	20
Withstanding voltage	AC1000V a minute	AC1000V a minute
Current rating	4A	4A
Insulation resistance	1000MΩ MIN.	1000MΩ MIN.
Contact resistance	5mΩ MAX.	5mΩ MAX.
Solder cup dia.	ϕ1.2	ϕ1.2

Note:

1. Contact arrangements are shown at the fitting section of Plug.
2. Insulation resistance is measured at DC 500V.
3. Contact resistance is measured at DC 1A.
4. Withstanding voltage is shown as test voltage, so that the preferable value for daily operation is about one-third of each figure.